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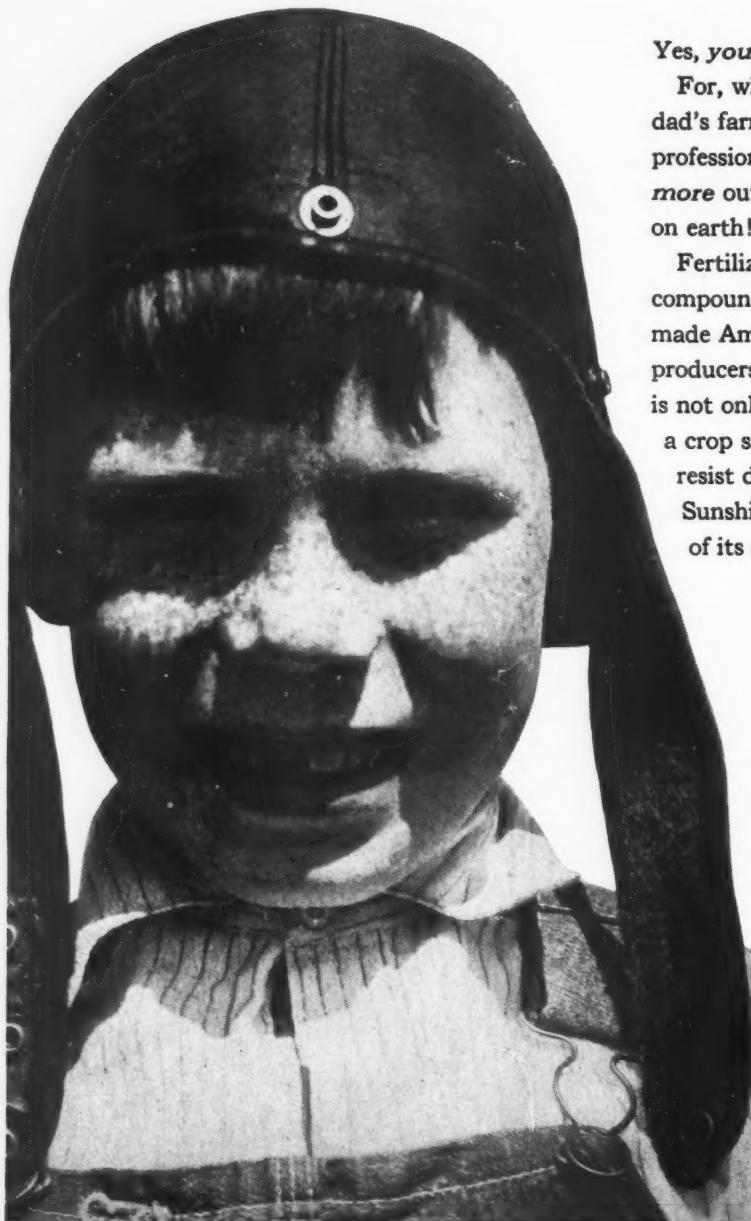
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✓ Easier Mixing

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Cincinnati, Ohio	Houlton, Me.	No. Weymouth, Mass.	
Cleveland, Ohio	Laurel, Miss.	Pensacola, Fla.	

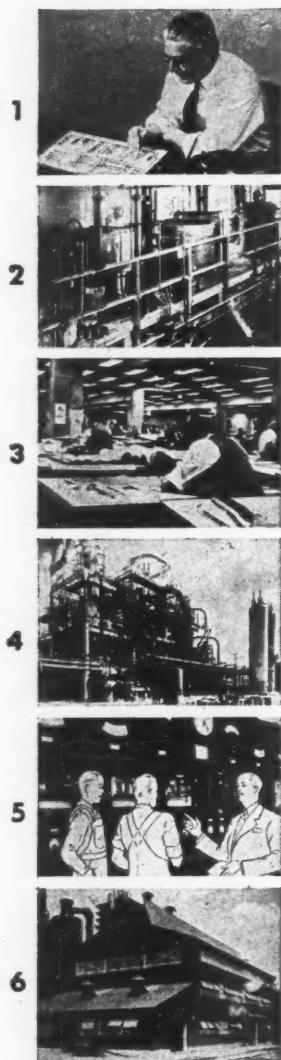


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The American FERTILIZER

Vol. 106

FEBRUARY 8, 1947

No. 3

The 1946-47 Fertilizer Program

Issued by the Production and Marketing Administration, U. S. Department of Agriculture.

The supply of fertilizer for the United States and possessions is expected to reach an all-time high this fiscal year, and will be more than double the 1935-39 average of pre-war consumption. On the other hand the demand appears greatly in excess of the supply. The supply of nitrogen materials for 1946-47 will be almost as large as last year. There will be an increase of about eight per cent in the supply of soluble superphosphate. Potash supplies will be slightly above last year.

The farm demand for fertilizers has increased greatly. During the last five or six years the steadily increasing supply of fertilizers has been an important factor in the record high crop production in the United States. Many farmers who did not use any fertilizers in pre-war years are now using fertilizers with very good results. Other farmers are using more fertilizer per acre and obtaining higher per-acre crop yields. According to a study made in 1943 by the Department and State Production Adjustment Committees, considerably more fertilizer than is now available could be used advantageously at the present price level.

Nitrogen Situation

It is expected that 693,000 tons of nitrogen will be available for agricultural use in 1946-47 in the United States and possessions. Domes-

tic production of nitrogen in all forms is estimated to be 559,000 tons, and imports, primarily from Canada and Chile, will account for 201,000 additional tons. Export commitments of 67,000 tons leave a domestic supply of 693,000 tons. This compares with an average consumption of 371,000 tons in 1935-39, and 702,000, last year.

Table I, based on data obtained from the Office of Temporary Controls (formerly the Civilian Production Administration), compares the supplies of nitrogen for 1945-46 with the supplies in the program goal of 1946-47, and compares the supplies available from July through November in both 1945 and 1946.

The supply of nitrogen from ammonium sulphate for 1946-47 is estimated to be 8,000 tons less than last year. Barring losses in production due to shut-down in coal and/or steel production during the remainder of 1946-47, the supply of nitrogen this year may exceed that of last year. As shown in the above table, 6,500 tons more of nitrogen as ammonium sulphate were available in the first five months of this year than in the corresponding period last year.

Domestic production and imports of ammonium nitrate in the first five months of this year were 50 per cent greater than in the corresponding period last year. The total supply of ammonium nitrate for this year is estimated to be 15,600 tons more than last year.

In other nitrogenous materials this year there are 36,000 tons less of nitrogen. The

¹1946-47 refers to the current fiscal year, July 1, 1946-June 30, 1947. When the term "this year" is used, it refers to the 1946-47 fiscal year. The term "last year" indicates the 1945-46 fiscal year.

loss in the first five months has been 12,100 tons. This great change in supply of other nitrogenous materials is due largely to the loss in production of synthetic nitrate of soda and urammon.

Imports of Chilean nitrate of soda are programmed at 96,800 tons of nitrogen, equivalent to 605,000 short tons of material. This is only slightly less than the 98,800 tons of nitrogen imported last year. Imports have been curtailed during the present year, first because of the maritime strikes in the United States and second, because of the port strikes in Chile. The import goal of Chilean nitrate is expected to be met, since the port strike was ended in late December 1946.

Nitrogen solutions reached the all-time high of 185,000 tons in 1945-46. The program for 1946-47 provides for 200,000 tons, 15,000 more than last year. Consumption of solutions from July through November 1946 was 15,300 tons more than in the same period in 1945.

Change in Nitrogen Materials

The supply of solid nitrogen materials for 1946-47 will be equal to the record supply of last year except for the supply of synthetic nitrate of soda and urammon. The supply of inorganic nitrogen in the form of solid materials for 1946-47 for use in the United States and its possessions is estimated to be 463,000 tons as compared with the 487,000 tons available last year.

Ammonium sulphate and nitrate of soda made up over 60 per cent of the nitrogen supply in 1941. In 1946-47 the tonnage of nitrate of soda and ammonium sulphate account for only 36.2 per cent of the total supply. The nitrogen solutions will account for over one-fourth of the supply in 1946-47. In 1941 there was no ammonium nitrate as such in the fertilizer supply, while in 1946-47 it will account for nearly 26 per cent of the total supply. After exports are subtracted, the supply of ammonium nitrate will account for 21.5 per cent of the quantity available in the United States and its possessions. Organic nitrogenous materials accounted for 10.9 per cent of the nitrogen in 1941 and less than five per cent of the domestic supply in 1946-47.

Domestic distribution of nitrogen fertilizer materials is through commercial channels, without Government allocations or domestic controls on use. With new plants and sources of supply, new organizations distributing fertilizer, and a strong demand from new areas for fertilizer, there will be some regional variation in the usual pattern of distribution.

Export Program

During the war a committee on fertilizers of the Combined Food Board recommended to the Board allocations of fertilizer materials based on each country's requirements, crop production, previous consumption, and estimated production. After unanimous approval of all Combined Food Board members, each

TABLE I

SUPPLIES OF NITROGEN AVAILABLE IN THE FISCAL YEAR 1945-46 COMPARED WITH THE SUPPLIES PROVIDED UNDER 1946-1947 PROGRAM, AND WITH THE SUPPLIES AVAILABLE FROM JULY THROUGH NOVEMBER, 1945 AND 1946

		Year 1945-46 Tons	Year 1946-47 Tons	July through 1945 Tons	November 1946 Tons
Ammonium sulphate	U. S. production.....	149,200	143,500	65,000	77,000
	Imports.....	25,800	23,500	12,000	6,500
Ammonium nitrate	U. S. production.....	137,700	159,500	42,000	66,500
	Imports.....	44,200	38,000	16,000	20,000
Other N material	U. S. production.....	62,500	26,400	32,200	15,400
	Imports.....	42,200	42,300	17,300	22,500
Nitrate of soda	Chile.....	98,800	96,800	28,000	14,700
Solutions	U. S. production.....	185,000	200,000	63,700	79,000
Organics	U. S. production.....	30,000	30,000	12,500	12,500
	Totals.....	775,400	760,000	288,700	314,100
Exports.....		73,000	67,000	25,500	42,200
Net for U. S. and possessions.....		702,400	693,000	263,200	271,900

country was responsible for implementing the recommended allocations. The Combined Food Board has been succeeded by the International Emergency Food Council, and within that council a committee on fertilizers is functioning.

For 1945-46 the United States allocation for export was 73,000 tons of nitrogen, principally ammonium nitrate, some ammonium sulphate, and other nitrogenous materials. For 1946-47 the allocations for export were first scheduled at 97,000 tons of nitrogen. These allocations were reduced to about 67,000 tons, due to loss in production of synthetic nitrate of soda because of shortage of soda ash and some loss in uramox production. It is not practical to export liquid forms of nitrogen. Four thousand tons of solution nitrogen will be used to make ammonium phosphate for export. Shipments to Puerto Rico and Hawaii are considered not as exports but as off-shore shipments since they are United States possessions.

Programmed exports of nitrogen for the year 1946-47 are as follows:

	Tons
Philippines.....	2,110
Canada.....	500
Latin American Republics.....	3,795
France and colonies.....	13,529
Netherlands.....	15,560
Netherland East Indies.....	1,518
UNRRA (mostly China).....	28,538
Finland.....	1,518

The United States is a large net importer of nitrogen. United States exports for this year are only one-third of imports. Table II shows the approximate imports and exports of nitrogen for one pre-war year (1940), last year, and the programmed exports for the current fiscal year.

TABLE II

DOMESTIC PRODUCTION AND APPROXIMATE IMPORTS AND EXPORTS OF NITROGEN, CALENDAR YEAR 1940, AND FISCAL YEARS 1945-46 AND 1946-47

Year	Domestic	Imports	Exports
	production		
	Tons	Tons	Tons
1940.....	244,000	184,000	60,000
1945-46.....	564,400	210,000	73,000
1946-47.....	559,000	201,000	67,000

Three-fourths of the exports in 1946-47 are programmed as ammonium nitrate. Since the Army borrowed about 110,000 tons ammonium nitrate during the four months, August through November, practically no ammonium

nitrate was exported to foreign countries before December 1, 1946. The ammonium nitrate export program from December 1946 through June 1947 is expected to amount to 152,000 tons of material, exclusive of Army exports. The total supply of ammonium nitrate available in this 7-month period will be 460,000 tons, including the 110,000 tons being returned by the Army and commercial domestic production and imports of 350,000 tons. In effect, 70 per cent of the ammonium nitrate to be exported was taken out of the supply before the first of December. The balance has been scheduled in rather uniform monthly amounts, and all producers will share in the program.

Table III shows the quantity of nitrogenous fertilizers imported from Canada in the 1945-46 fiscal year and the amount allocated from Canadian production to United States in 1946-47.

TABLE III

IMPORTS OF NITROGENOUS FERTILIZERS FROM CANADA, 1945-46, AND ALLOCATION OF CANADIAN PRODUCTION TO UNITED STATES, 1946-47

Material	Imports	Allocations
	1945-46	1946-47
	Tons	Tons
Ammonium sulphate.....	126,024	115,000
Ammonium nitrate.....	132,059	114,000
Cyanamid.....	143,204	130,000
Ammonium phosphate		
11-48-0.....	36,351	22,045
16-20-0.....	51,766	71,650
Total tons N.....	113,058	102,879

Off-shore Shipments to Puerto Rico and Hawaii

Shipments to Puerto Rico for 1946-47 are scheduled as 85,000 tons ammonium sulphate, 26,385 tons of ammonium nitrate, and 1,000 tons of solution nitrogen taken in ammoniated superphosphate. In addition, on June 30, 1946 Puerto Rico was short 18,000 tons of ammonium sulphate and 5,100 tons of ammonium nitrate on its 1945-46 program. These quantities were provided for early this year in addition to the 1946-47 shipments.

Nitrogen fertilizers for Hawaii are largely shipped from western Canadian production as ammonium sulphate, 11-48-0 ammonium phosphate, and ammonium nitrate, and are credited against Canadian allocations to the United States. Supplies to Puerto Rico and Hawaii have not shown nearly the percentage increase as have the supplies made available on the continent. Consumption in 1939 in these two off-shore areas was 33,000 tons of

nitrogen. It has increased only 29 per cent, or to 42,500 tons in 1946-47, whereas the continental increase from 1939 to the current year has been 78 per cent.

Army Nitrogen Program

The Army nitrogen program of providing fertilizer materials for occupied areas to obtain minimum supplies to prevent disease and unrest and to maintain orderly government, will have no net effect on the nitrogen available for domestic use. The Army has reactivated four Government-owned ammonia plants which were closed down immediately after VJ-Day and 11 other facilities needed to produce solid ammonium nitrate. Time was required to put these plants into operation. A plan was worked out for the Army to borrow up to 166,000 tons from the domestic supply during the last five months of 1946. Actual borrowing was only 110,000 tons from August through November. The quantity borrowed will be returned by the Army during the first five months of 1947, according to the agreement between the producers and the War Department. The Civilian Production Administration allocated Army borrowings on a percentage basis to domestic producers according to their capacity to produce and to Canada according to the relative size of their imports to the United States.

Ammonium nitrate was taken for this program because it is the material which the Army would produce and return. Ammonium nitrate is a solid material suitable for export and has a higher nitrogen content than most solid nitrogenous materials, thus requiring fewer bags and less handling, transportation, and shipping space.

Domestic Nitrogen Production

After a study of nitrogen production and utilization, a committee of the Department of Agriculture in August 1944 recommended that Government ammonia plants with a rated capacity of 300,000 tons of nitrogen be converted for the production of nitrogen fertilizers and ammonia derivatives as soon as war conditions would permit. By August 12, 1945, plans for use of individual plants were well worked out. The Jayhawk and Ozark plants and the TVA plant at Sheffield, Ala., were kept in production. Since VJ-Day the War Assets Administration, according to its October 31, 1946, report on Disposal of Synthetic Ammonia Plants, has disposed of the following: Jayhawk, Pittsburg, Kans., to Spencer Chemical Co.; Ozark, Eldorado, Ark., to Lion Oil Co.; Buckeye, South Point, Ohio, to Solvay Process; Dixie, Sterington,

La., to Commercial Solvents; Lake Charles disposal is pending. Accordingly, the rated capacity of private synthetic nitrogen plants increased from 390,000 tons in 1940 to 431,000 tons in November 1945, and to 797,000 tons in September 1946. In addition, there is capacity to produce about 260,000 tons of byproduct nitrogen and the TVA capacity of 50,000 tons of synthetic nitrogen annually.

The Department of Agriculture is cooperating fully with other Government agencies and private producers to obtain maximum production of fertilizer from present facilities and to expand facilities where feasible. Many bottlenecks, such as shortage of tank cars, equipment, repair parts, and fuel, continue to retard production at some plants. Shortage of tank cars for shipment of anhydrous ammonia and nitrogen solutions has been most serious. New cars have been ordered and deliveries are being pushed as rapidly as possible.

Phosphate Production

Production of soluble phosphatic fertilizer for domestic use is expected to be 1,525,000 tons P₂O₅, about eight per cent more than last year. Production of phosphate rock is estimated at 6,000,000 long tons, of which about 5,500,000 tons will be available for domestic use. The Army program of phosphate rock for occupied areas is not included in these figures. In one pre-war year, 1940, the United States production of phosphate rock was 4,100,000 long tons per year, of which about one-fourth was exported. This year, exports of phosphate rock will be only about ten per cent of United States production.

The practical operating capacity for production of ordinary superphosphate is 2,067-500 tons soluble P₂O₅. The present production rate of concentrated superphosphate is about 360,000 tons P₂O₅, a total 2,427,500 tons P₂O₅ capacity for production of soluble superphosphate. There are 164 superphosphate plants; three plants produce concentrated superphosphate exclusively, and four plants produce both concentrated and normal superphosphate.

Production of the three forms of soluble phosphate fertilizers for 1945-46 and production in the first four months of 1945-46 and the same period of 1946-47 are shown in Table IV.

Production of soluble phosphatic fertilizer in the first four months of this year was 15,262 tons P₂O₅ or three per cent more than in the corresponding period last year. This record

(Continued on page 28)

House Committee Reviews Fertilizer Situation

Witnesses Give Complete Picture of Current Fertilizer Shortage, Committee Makes Recommendations to Relieve Nitrogen Shortage and Transportation Difficulties

AN INVESTIGATION on the current fertilizer situation was held by a sub-committee on fertilizers of the House Committee of Agriculture in Washington on January 31st. Representative Anton Johnson of Illinois presided. Witnesses were present from the fertilizer industry, the National Grange, the American Farm Bureau Federation, the Department of Agriculture, CPA, Army, Maritime Commission and State Department.

From the testimony it developed that production during the 1946-47 season will be as great or greater than the previous record year, provided transportation bottlenecks do not prevent supplies of materials reaching the manufacturing plants.

Fertilizer Men Testify

R. B. Douglass, of Smith-Douglass Co., testified that (1) except for shutting off exports of phosphate and nitrogen materials and providing needed transportation facilities for some materials, he could see no remedy for the spring season, (2) "operating under a free economy . . . it seems reasonable to assume that by summer or fall of 1947 practically all shortages will disappear," (3) fertilizer supplies jumped from 7,300,000 tons in the 1935-39 period to 14,000,000 in 1946 with present indications pointing to an all-time high in 1946-47, (4) CPA reports 65 new fertilizer plants are being built and major additions have been made to 44 existing plants, (5) Chilean nitrate of soda imports will be much smaller because of domestic and Chilean maritime strikes and lack of shipping facilities and domestic nitrate will be less because of the shortage of soda ash, and these shortages will be more acute in the South Atlantic States, (6) except for strikes and labor difficulties, farmers would have had 10 to 15 per cent more fertilizer and materials, (7) increased consumption in new areas (particularly the mid-west) "is naturally taking away some supplies which would otherwise be available to the older consuming areas, but even in these older areas there is a much greater supply than in the pre-war period."

Herbert Meyers, of Virginia-Carolina Chemical Corp., testified (1) superphosphate production will likely exceed last year's record, (2) about 6,000,000 long tons of phosphate rock will be produced in the U. S. this year of which probably less than 10 per cent will be exported and "the major portion of the rest will be converted to superphosphate for domestic use," (3) new facilities should add 1,500,000 to 2,000,000 tons to the rock supply next season, (4) shortages of boxcars have "seriously interfered" with phosphate rock deliveries, (5) allocations of the International Emergency Food Council and action of the Army in supplying occupied territories have had a significant effect both in the amount of nitrogen available and timing of deliveries of domestic supplies, (6) it is now questionable whether all the Chilean nitrate allocated (about 600,000 tons) this year will arrive in the U. S. in time for use this season, because of maritime strikes "plus the lack of satisfactory shipping facilities, all of which are obviously beyond the control of the fertilizer industry," (7) because of arrangements made by the Army to supply ammonium nitrate to occupied countries and to allocations for export by the IEFC, "the timing of delivery . . . for domestic use will be such that it will be in relatively short supply when most needed by agricultural interests of this country," (8) the total nitrogen supply "is close to the peak" and "the amount used in making complete mixed fertilizers will not differ greatly from the previous year"; notwithstanding the total nitrogen supply situation, there will be a serious dislocation of top dressing materials (nitrate of soda and ammonium nitrate) particularly in the South Atlantic States.

H. M. Albright, of U. S. Potash Co., testified that (1) this year's supply of potash is estimated to be slightly above the all-time high reached last year, (2) in 1946 drought seriously depleted water resources and heated available water to high temperatures which curtailed production; "my company's refinery output was down perhaps 10,000 tons of high grade muriate of potash due to those abnormal drought conditions and that potash which was

not made was lost for this season," (3) the boxcar shortage has materially affected potash deliveries, is still a hazard and "our company is today 400 cars in arrears in shipping orders," (4) "even if more output of potash could be achieved; even if more run-of-mine salts should be ordered for fertilizer use, there is no reason to believe that the extra supply of boxcars could be had," (5) in pre-war years the U. S. imported half its potash from Europe, but today domestic production serves all of North America.

M. H. Lockwood, president of the National Fertilizer Association, (1) asked for "government action providing transport for fertilizers" to assure greater supplies for spring plantings and said (2) boxcars must be provided, tankcars must be assured for anhydrous ammonia and ammonia solutions and for sulphuric acid, ships are needed for nitrates from Chile and to carry phosphate rock coastwise.

Transportation Problems

Harold Stein, who is associated with Dr. John R. Steelman, Assistant to the President, testified: "We are anxious to get the government out of the fertilizer business as soon as possible and get it back in the hands of private industry." He said that his office had requested the Maritime Commission to make boats available at the first opportunity for bringing in Chilean nitrate, that a government inter-agency committee had been formed over a year ago to consider operation of the government ammonia plants, that the committee was instrumental in seeing to it that the Army undertook operation of four plants and that the War Assets Administration sold or leased to private industry all the plants available for fertilizer production, and that it hoped to arrange with those two agencies to put other plants in order for economic production of fertilizers. He said the committee had not yet been able to secure tankcars to serve the Childersburg acid plant but that it expected to secure such cars soon.

Arthur G. Syran, Assistant to the Director of Operations, Maritime Commission, said that the Commission had received word of the ending of the stevedores' strike in Chile on January 2, 1947, and that action was taken the 5th or 6th calling 13 ships into service from "lay-up" near Mobile. He said that the number was later raised to 15, that one ship had sailed for Chile January 25th, two were scheduled to sail today, two more would follow February 2nd, another on the 8th, and that the rest would follow at two or three-day intervals thereafter until all were in service.

He estimated the last of the 15 boats should reach Chile by the first week in March. Queried about why there was no "pool" of operative ships and the necessity for sending these ships through drydocks for repairs, he answered that the Commission had a "pool" last fall standing by for emergencies, but that the maritime strikes and the coal strike had so upset matters and delayed shipments of coal and grain abroad that when the strikes ended it was deemed necessary to wipe out the pool and to put every available ship to work transporting grain and coal to the critically "short" countries abroad. He said it was not possible to have ordered ships into immediate service on Chilean nitrate because they were all "committed" to hauling grain and coal. He added that once the pool had been drained, the Commission did not have the money to make expensive repairs to ships that may remain laid-up; therefore, it would not be able to re-establish a pool of ships until it could do so by reacquiring ships now in service. He said that the Maritime Commission, too, was trying to "go out of business"—that its principal authority for operating ships expires February 28th. Asked about the ships now in operation, he said that the Commission operates about 1,000 of which some 270 are tankers, that 1,100 additional ships are leased to private operators and that there are approximately 3,500 laid up.

Export Relief Program

W. A. Minor, Assistant to the Secretary of Agriculture, reviewed the U. S. D. A.'s 1946-47 fertilizer program. Asked about the size of our export commitments, he said that they had been scaled down from 97,000 to 67,000 tons N and that we were scheduled to receive imports of 200,000 tons N and that if we shut off the exports it might have serious repercussions on some of the imports.

Representatives of the State Department's International Resources Division testified regarding the need for food and fertilizers abroad. They said that some of the nations were "destitute" and that it was a question of shipping food or fertilizer, or letting the people starve. The international food and fertilizer committee concluded it was more economical to ship fertilizer than food.

Col. G. K. Heiss, War Department, said that a year ago the Army had tried to purchase supplies of fertilizer for the occupied zones but found it impossible without disrupting supplies at home, and finally started the program of operating the explosives plants which were not intended for fertilizer produc-

(Continued from page 26)

Increase in Missouri Tonnage

One farmer out of every two in Missouri used commercial fertilizer last year. This is what a survey by Missouri county extension agents shows. These farmers used about 2.4 tons per farm for a total of some 300,000 tons which amount far exceeded that of any other year. One-half of this went on spring seeded crops.

According to A. W. Klemme, extension soils specialist of the University of Missouri, the demand for fertilizer this year probably will be as great or greater than in 1946.

Tankcar Withdrawal Order Rescinded

A further threat to the current fertilizer supply has been averted by the withdrawal of an order from the Office of War Mobilization and Reconversion directing fertilizer manufacturers to return leased tankcars to the Army.

Several hundred Army-owned tankcars have been under lease to commercial producers since the war for the movement of anhydrous ammonia, ammonia solutions and sulphuric acid, and these cars were ordered returned to the Army between January 15th and March 1st. In addition it is claimed, the Army was also seeking to requisition about 100 privately-owned pressure tankcars for its fertilizer program.

Following vigorous protests from the various fertilizer and farm organizations, as well as from members of Congress, the order was rescinded following a meeting of policy heads of the several government agencies concerned.

Admittedly, however, the decision was not a solution to the problem that had been raised as a result of the Army overseas fertilizer program, and another meeting of the top officials is to be held shortly.

According to one source the program boils down to one of three alternatives: (1) cutting back the Army's fertilizer program so that private industry can operate at full rate, (2) cutting back private industry's program to permit the Army's program to go ahead at full peak, or (3) leveling off both programs to fit the supply of tankcars that are available.

The agencies concerned, meanwhile, are making a most exhaustible investigation of the use of tankcars by all industries in an effort to find out where greater efficiency can be produced. There have been a number of reports that some shippers have been using

105-A high-pressure tankcars for the transportation of low-pressure solutions and thereby placing an unnecessary strain on the supply of the high-pressure cars.

The possibilities of using some of the liquefied petroleum gas tankcars in the fertilizer service also is being explored over the strong protest of the petroleum industry which is complaining that there is an extreme shortage of these cars now.

St. Regis Forms New Sales District

St. Regis Paper Company, New York, has announced the formation of a new sales district in its multiwall bag division, effective February 1, 1947.

For the present, the district will cover the State of Pennsylvania, with the exception of the city of Philadelphia. The new district, to be known as the Mid-Atlantic District, will have its headquarters in Allentown, Pa., and will be under the supervision of Burton A. Ford, vice-president of the St. Regis Sales Corporation.

Mr. Ford will continue his close contact with the lime and fertilizer producers, and will represent the St. Regis Paper Company and the St. Regis Sales Corporation at the periodic meetings of these industries.

Other St. Regis multiwall bag sales districts have headquarters in New York, Baltimore, Chicago and San Francisco.

C. & O. Repurchases the Greenbrier

The Greenbrier, White Sulphur Springs, W. Va., scene of many conventions of the National Fertilizer Association, had been sold by the War Assets Administration to the Chesapeake & Ohio Railway Company. This property was purchased by the Government from the railroad in 1942 and functioned as a Base hospital during the war. Some months ago, it was reported that the town of White Sulphur Springs would purchase the property because of a technicality which placed the railroad well down on the list of priorities to purchase. Further negotiations, however, resulted in the sale to the C. & O.

The property will be reconditioned and operated by the White Sulphur Springs Company, a subsidiary of the railroad. The necessary work will cost about \$4,000,000 and is expected to be completed by September, 1947.

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Phosphate Research Committee to Use Radioactive Phosphorus

Research on the fundamental principles of phosphate fixation and release by soils, utilizing radioactive phosphorus, is being supported by a research grant from the Phosphate Research Committee of the fertilizer industry to the North Carolina Agricultural Experiment Station at Raleigh, N. C. The administrative committee of the industry has as members, J. E. Totman of Northeastern Chemical Industries, Inc., and F. W. Darner of Tennessee Corp., with Dr. V. Sauchelli of the Davison Chemical Corporation as chairman. The technical committee responsible for the work consists of Dr. H. B. Siems of Swift and Company, R. R. Hull of I. P. Thomas and Sons Company, H. E. Hendricks of the Knoxville Fertilizer Company, F. E. Boyd of the Virginia-Carolina Chemical Corp., and Dr. V. Sauchelli as chairman. The North Carolina Station has arranged for cooperation with the New York Agricultural Experiment Station at Ithaca, N. Y., and the Bureau of Plant Industry, Soils, and Agricultural Engineering, Agricultural Research Administration, United States Department of Agriculture, Beltsville, Md.

The Phosphate Research Committee was formed by various factors of the fertilizer industry as an independent organization interested solely in promoting this cooperative project with state and federal research laboratories. Voluntary contributions from fertilizer and phosphate mining companies comprise the fund used by the cooperating laboratories.

In some newspapers this project was erroneously reported as being undertaken and financed by the National Fertilizer Association. This, however, is not the case, stated Maurice H. Lockwood, president of the Association, although the members of that body are interested in the results of this important research.

"We know that plants fed with fertilizer phosphate are often low in their use of this particular plant food," Mr. Lockwood said, "with only 25 per cent being recovered by some plants. This low rate of recovery has been one of the most perplexing problems of soil chemistry. Naturally, it is impossible to forecast the results of this atomic research but the scientists are hopeful that the new tool will supply the answer to the low rate of recovery."

"Once equipped with the answer, much

higher rates of phosphate recovery by plants may lie ahead, with consequent improvement in fertilizer efficiency and lower costs for the farmer."

Explaining how radioactive phosphorus is used in agricultural research, Mr. Lockwood said that this form of elemental phosphorus can be made up in any of the usual types of fertilizer phosphates. These phosphates are then used in plant nutrition studies. With sensitive electrical instruments like the Geiger counter the course of the radioactive phosphorus can be traced from the soil through the roots, stem, leaves, and seeds of plants. Happily, radioactive phosphorus has no bad characteristics which will harm plants, animals, or human beings, as is the case with some other radioactive elements. In fact, this same element is already proving an equally convenient "tracer" tool in medical research.

Farm Land Prices Only 10% Below 1920 Boom Level

Farm real estate prices are within 10 per cent of the all time high established in 1920, according to Walter H. Droste, president of the Federal Land bank of St. Louis. The United States index of farm real estate values (1912-14 equals 100) reached 152 on November 1, 1946, compared with the 1920 peak of 170.

Using Illinois as an example, Droste points out that the percentage rise in farm real estate values are averages. Prices for some farms have risen considerably above the average. A farm in northeastern Illinois that was bought for \$7,000 in 1937 was sold in 1946 for \$20,400. A more extreme rise was reported recently from this same area. A farm that was purchased in 1945 for \$5,000 was resold in the fall of 1946 for \$20,000.

In many areas few or none of the really good farms are on the market, Droste says. Many farms being purchased today, particularly by individuals with little or no experience in farming, are poor farms. While the majority of current farm sales are for cash or with a substantial down payment, some poor farms are being purchased with a small down payment. When farm commodity prices return to more normal levels the average farmer on one of these poor farms will find it difficult to pay off a heavy loan, Droste says.

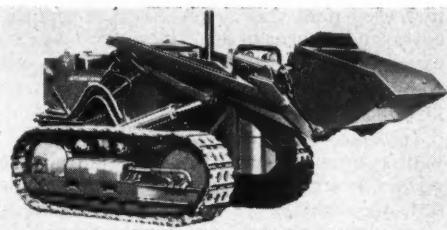
A report by the U. S. Department of Agriculture on the farm real estate market as of November 1, 1946, cautions that "production costs are likely to remain high for some time

after prices received by farmers have fallen below the high current levels. The recent decline in corn, cotton and tobacco prices has apparently caused caution among some potential buyers of farms. Increasing caution regarding land purchases may indicate that the peak of the current land boom is approaching, at least in some areas. If the peak is approaching, greater caution may be necessary to avoid entering a period of declining prices with too great an investment in land with burdensome mortgage debts."

New Hough Bulldozer-Shovel

The Frank C. Hough Company of Libertyville, Illinois, has announced the new Model 9-A Bulldozer-Shovel, specifically built into the International T-9 and TD-9 TracTractor.

The Model 9-A is a dual purpose unit, and may be equipped with either a full track width one yard bucket or bulldozer blade. Since the Model 9-A was specifically designed and built into the tractor, the original tractor balance, stability and traction are maintained with both blade or bucket.



The Hough Tractor Shovel

The bucket is raised, lowered, dumped and related entirely by hydraulic control, eliminating practically all physical effort on the part of the operator. The bucket tilts back automatically in carrying position preventing spillage. Overhead and side structures are eliminated contributing to full 360° visibility while digging, carrying or dumping, as well as assuring better balance and stability, with reduced wear on front track rollers and idlers. A long, high dumping reach is provided for dumping into trucks, hoppers, etc. Unique design of push-arms provides a powerful crowding action in digging range, and fast hoisting action thereafter.

A new catalogue, No. 164, complete with mechanical details and specifications has been issued and is available upon request.

Winter Grazing Successful in the South

That dairymen and beef producers are rapidly adopting real winter grazing practices was repeatedly demonstrated on the recent winter grazing tour made by college workers, industry men and producers in Georgia, Alabama, and Mississippi, January 9-14. In many cases, especially in Georgia, farmers were planting earlier, seedling at heavier rates, and using more fertilizer per acre than previously recommended by the respective College of Agriculture. For example, in Jasper County, Georgia, 37 farmers had used an average of five bushels of oats plus either 40 pounds of rye grass or 30 pounds of clover seed, 1,080 pounds of fertilizer per acre and they had received 51 days grazing at the rate of 0.6 acres per cow up to January 1st of this year. Little winter grazing was practiced there two years ago.

Various farms were visited between Athens, Macon and La Grange, Georgia. Dr. M. P. Jarnagin, Head, Department of Animal Husbandry, stated that the daily winter grazing at the University of Georgia dairy farm had saved one-half the amount of hay, silage, and grain normally fed. Other dairymen reported increased milk yields, lowered feed and labor costs, and returns of \$4 or more for each dollar expended for fertilizer. Especially impressive was the large number of beef cattle on winter grazing in Upson County, Georgia.

In Alabama, more emphasis was given to winter grazing from crops like alfalfa, lespediza sericea, and Caley peas on permanent sod, in addition to the annual cereal and clover grazing crops. Excellent pastures were seen near Welch, Lafayette, Auburn, Montgomery, and on the Black Belt Substation at Marion Junction; and in spite of the adverse weather, several oat grazing tests near Starkville, Brooksville, Meridian, and Hattiesburg,

Mississippi. At the Mississippi Agricultural Experiment Station, beef steers were observed gaining two pounds per head per day on nothing but fertilized oat pasture, and according to last year's results, making high quality beef with net returns of more than \$20 per acre.

Short, effective presentations of experimental pasture and other crop work under way and fertilizer recommendations were presented at night meetings in Macon by Dr. G. W. Burton and J. L. Stephens of the Georgia Coastal Plain Experiment Station, Tifton, and by Dr. O. E. Sell, Experiment, Georgia; at Auburn by Dr. C. F. Simmons, Dr. H. T. Rogers, Dr. D. G. Sturkie, and Prof. J. T. Williamson of the Agronomy Department, Prof. J. C. Grimes of the Animal Husbandry Department, and by H. S. Swingle, Fish Culturist (on fertilizing fish ponds). Short presentations were made at State College, Mississippi by Dr. Russell Coleman, Dr. H. W. Bennett, Mr. H. B. Jordan, W. V. Thompson, and Prof. R. H. Means, with a night program on soil testing and corn fertilization at Meridian conducted by Dr. R. H. Bray, University of Illinois. In the many discussions, it was acknowledged that there are still several important research problems to be solved including the production of disease-resistant oats, barley, and rye grass for earlier fall grazing and more need of fertility studies on time of fertilization. But with each State now planting hundreds of thousands of acres of winter grains for grazing alone, it will not be difficult to increase still further when supplies of fertilizer are even more plentiful.

The whole tour was successfully planned by Leroy Donald, chief agriculturist for The Barrett Division, Allied Chemical & Dye Corp. and his associates, with E. D. Alexander, Extension Agronomist, Prof. H. B. Henderson, Head, Dairy Department and

(Continued on page 24)

BRADLEY & BAKER

FERTILIZER MATERIALS - FEEDSTUFFS

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Norfolk, Va.

Barnett Bank Building
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504 Merchants Exchange Bldg., St. Louis, Mo.

FERTILIZER MATERIALS MARKET

NEW YORK

Present Tight Situation Expected to Continue for Next Year or Two. Congress Committee to Investigate Fertilizer Situation. Foreign Materials Going to Europe at Higher Prices. End of Potash Allocation Expected Shortly

Exclusive Correspondence to "The American Fertilizer"

NEW YORK, FEBRUARY 3, 1947.

Demand during the past two weeks has continued very active for all basic agricultural chemicals. Schedules are exceedingly firm with small increases to be noted in some items. It is the general opinion of those interested in the fertilizer industry that the present tight supply situation on most materials will prevail for at least another year or two, and under these circumstances prices can be expected to remain near present levels.

It is reported from Washington that a special subcommittee of the House Agricultural Committee will shortly hold an investigation of the general fertilizer situation. The importation of nitrate from Chile, supplies of fertilizers to meet increased demand, transportation difficulties, and the Army's foreign program are among the problems to be reviewed.

There have been no imports of fertilizer materials in this area during the past reporting period, and offerings from foreign sources have recently been few and far between. It is reported that organic materials produced in South America continue to go to Great Britain at high prices.

Sulphate of Ammonia

Due to capacity steel production, supplies of ammonium sulphate have improved considerably, but shipments to fertilizer manufacturers fall considerably short of meeting current demand. In addition to domestic requirements, constant pressure is being exerted for export. Effective February 1st, Birmingham producers have raised their price \$2.00 a ton.

Nitrate of Soda

Domestic production continues to be hindered by difficulties in obtaining raw materials. Imported nitrate has been taken as soon as made available, and increased shipments from Chile are expected in February.

Organic Materials

A few sales of dried blood to fertilizer manufacturers at \$9.50 (\$11.55 per unit N) have been reported, but manufacturers are doing without organics wherever possible. Bone meal, tankage and other items remain out of reach of the fertilizer mixer, and even the feed trade has shown little interest in buying at current prices.

Superphosphate

Acidulators of ordinary superphosphate are shipping material as soon as produced, and demand above current commitments cannot be met, due to shortage of acid. Triple superphosphate remains very tight in spite of record production.

Potash

Pressure for April/May commitments is increasing from mixers, but transportation shortages would make it impossible for producers to satisfy demand. The question of government allocation after March 31st remains undetermined, but an announcement removing controls is expected in the near future.

CHARLESTON

Heavy Movement of Mixed Goods Continues. Shortage Continues in All Materials. Car Shortage Hampers Deliveries.

Exclusive Correspondence to "The American Fertilizer"

CHARLESTON, FEBRUARY 3, 1947.

Movement of mixed goods to consumers is becoming quite heavy and farmers are calling strongly for deliveries. Nitrate of soda is extremely short and manufacturers continue to be hampered by lack of sufficient ingredients such as potash and superphosphate. Deliveries are ahead of last year's tonnage for the same period nevertheless.

Organics.—Nitrogenous tankage remains firm at \$6.00 per unit ammonia (\$7.29 per unit N) at mid-western producing point and

\$4.50 (\$5.47 per N) f.o.b. Eastern producers' works, but quotations are nominal. Vegetable meals have weakened further in price but recently cottonseed meal has been exported in fair quantity and the price may firm up. As of January 30th, eight per cent cottonseed meal in bags sold around \$66.00 to \$68.00 delivered Southwestern points for prompt shipment to fertilizer manufacturers. Seven per cent cottonseed meal was about \$5.00 per ton less. Peanut meal, 45 per cent protein, sold around \$62.00 to \$64.00 bulk, delivered Southeastern points. Soy bean meal figured about \$70.00 delivered Southeastern points in bulk. Some re-sale nitrogenous sold at about \$6.75 per unit ammonia (\$8.20 per unit N), f.o.b. Midwestern producers' factories.

Castor Pomace.—Spot material is practically unobtainable and contract prices are around \$37.50 to \$38.00 per ton, f.o.b. works.

Hoof Meal.—Some was imported recently but not very much. Domestic production has improved during January and the price remains fairly firm.

Blood.—Prices have weakened a bit on this as demand from the feed market seems to be fairly satisfied. Demand from the fertilizer market is light and the price is around \$8.50 to \$9.00 per unit ammonia (\$10.33 to \$10.94 per unit N), f.o.b. Chicago and New York.

Tankage.—Price is around \$8.00 per unit ammonia (\$9.72 per unit N), f.o.b. packing-houses and demand from the fertilizer market is light as the weakened price on vegetable meals inclines buyers to substitute cottonseed meal for tankage in fertilizers.

Nitrate of Soda.—Supplies are exceedingly short at present. Domestic production is off, due to shortage of soda ash. However, with the ending of the Chilean strike in late December, importations are expected to rise and sizeable deliveries are expected to be made in March. 529,000 tons are expected to arrive at Atlantic and Gulf ports during March through June, 1947.

Sulphate of Ammonia.—Rumors have it that some producers will raise their prices \$2.00 per ton as of February 1, 1947. Market remains very tight. Priority on 13,000 tons for export to Cuba has been issued, but export demand remains unsatisfied.

Ammonium Nitrate.—November production is reported at 81,733 tons, but the market remains tight and supply is behind demand.

Potash.—This article is extremely tight as most manufacturers cannot obtain all they need or want. There is talk of removing controls upon completion of allocations covered

CASE HISTORY No. 12

One in a series of factual experiences of a group of American manufacturers with Multiwall Paper Bags.

COST COMPARISON (Per Ton)

	100-lb. Bags	100-lb. Pails
Container cost	\$14.00	\$2.44
Labor and overhead	4.16	1.01
Total bagged		
Container cost	\$18.16	\$3.45
Total packed		
Product cost	\$14.00	
Total bagged		
Product cost	\$14.00	

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CHEMICALS	FERTILIZERS
DRUGS	POSSUM
INDUSTRIAL	MULCHES
MINERALS	WILDFLOWERS

PRODUCT CHARACTERISTICS

ABRASIVE	FLUID
ADHESIVE	FLUID
FLUID	FLUID
LIQUID	LIQUID
POWDERS	THICK

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makes big savings

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Small manufacturers, as well as large ones, can benefit by the economies and efficiency of a St. Regis Packaging System.

An outstanding example of how successfully the system was applied by one small manufacturer is found in the case of the Stevens Soap Corporation, of Brooklyn, N. Y. This company manufactures soap powder which is used as a general purpose cleaning agent and as an ingredient of abrasive cleaners.

Faced with the high cost of drums being used for packaging of the powder, and confronted by a shortage of labor, the Company installed a labor-saving 100-LS St. Regis packer in 1944 and switched to multiwall paper valve bags. Here are some of the immediate results:

- Container costs dropped from \$14 to \$2.60 a ton — a saving of 81%.

- Packaging output, although limited because of material shortages, increased from 2,500 to 6,000 lbs. per hour.

- Packaging costs went down 80%.

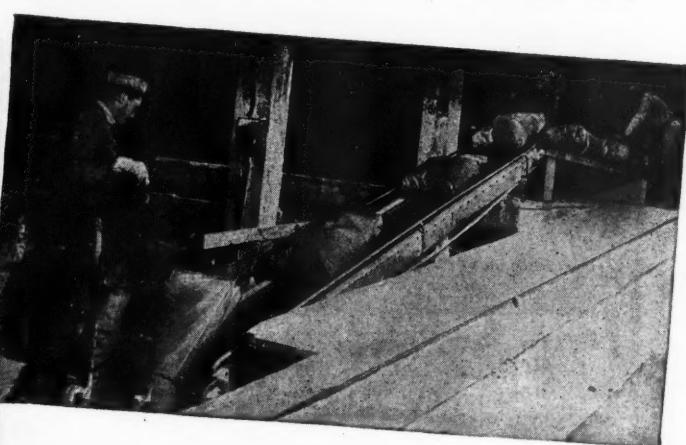
- Labor requirements dropped from five to three men.

- Much valuable storage space was saved by compact Multi-walls.

- Dust was eliminated from the packaging operation.

So satisfied is the Company with its St. Regis Packaging System that it has ordered and received shipment of another 100-LS packer in anticipation of increased output when shortages of ingredients are eliminated.

Mail this coupon to get the detailed picture story of how a St. Regis Packaging System helped this small manufacturer achieve economical and efficient packaging.



Left: One man operates the St. Regis 100-LS packer.
Right: Conveyor takes filled bags to loading point.

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CANADA: St. Regis Paper Co. (Can.) Ltd., Montreal, Vancouver.

Without obligation, please send me full details regarding "Case History" No. 12, outlined above.

NAME _____

COMPANY _____

ADDRESS _____

in the June, 1946–March, 1947 period. Some manufacturers obtain small amounts of potash by swapping other scarce materials.

Superphosphate.—Demand is strong, but stocks are low as the heavy mixing period progresses. Shortages of cars delivering phosphate rock continue to hamper production.

Phosphate Rock.—Supply of rock is behind this year's needs by 1,183,000 tons and the market is tight. Deliveries on contracts are behind schedule due to car shortage.

PHILADELPHIA

Material Supply To Be Investigated by Congress. Lower Prices on Organics Awaited. Shortage of Cars Continues.

Exclusive Correspondence to "The American Fertilizer"

PHILADELPHIA, FEBRUARY 3, 1947.

The supply of fertilizer materials in prospect for the coming season is not encouraging. The situation is sufficiently serious to attract the attention of Congress, and a seven-man committee has been appointed, with Anton Johnson of Illinois as Chairman, to look into the situation.

Sulphate of Ammonia.—Production is increasing and shipments move with fair regularity, but still not up to requirements. It is rumored that a price advance of about two-

dollars per ton may be looked for about February 1st, 1947.

Nitrate of Soda.—Market continues firm with available supplies short of current seasonal demand. Domestic production is still said to be hampered by shortage of raw materials, while imports are expected to increase after the end of this month.

Castor Pomace.—No new business reported, and any shipments are against contracts.

Blood, Tankage, Bone.—Blood sold for \$8.50 per unit of ammonia (\$10.33 per unit N), with tankage quoted irregularly at \$7.50 to \$9.00 (\$9.12 to \$10.94 per unit N), but quite stronger today. Bone meal, while not freely offered, was quoted at \$65.00 to \$75.00 per ton. Hoof meal seemed to stay put at \$8.50, but little or no buying. The feeding trade bought cake meals at the equivalent of \$8.00 per unit of ammonia (\$9.72 per unit N), and meat scraps at the protein equivalent of \$7.70 to \$7.75 per unit of ammonia (\$9.36 to \$9.42 per unit N). Fertilizer mixers are watching the tankage market, hoping for a break soon.

Fish Scrap.—This is out of season and no offerings reported.

Phosphate Rock.—Production is not equal to the demand, and the empty car supply is wholly inadequate. It is predicted that the



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to grow the crops which feed our
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Our plant at Trona, Calif., is
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supplies of these essential plant
foods, and other materials needed
in the national effort.

Manufacturers of Three Elephant Borax and Boric Acid

See page 25

BEMIS MINUTE MOVIES

for Shippers who want to save time and money

"Ferdinand Fertilizer Wins Top Money"

Scenario: Ferdinand Fertilizer is a high-class fellow...a skilled workman. He's a "special fertilizer" employed by gardeners, nurseries, golf courses, etc. This important fellow must arrive at work in tip-top condition. If Ferdinand allows his clothes to become torn or soaked with rain, he's ruined. He looks and looks for the right clothes to wear, and then...

Happy Ending: Success! Ferdinand Fertilizer now dresses up and keeps in perfect condition in Bemis Waterproof Laminated Textile Bags. (They're mighty economical too for such smart appearance and the protection they give.) Ferdinand commands top money . . . is in wide demand . . . and everybody's happy now.



PRE-TESTS STOP PROTESTS!

Bemis Waterproof Laminated Textile Bags head off complaints because they are tested *before* they are put to work. Their strength and tear-resistant, puncture-resistant qualities are pre-approved for you. And their economy is attested by scores of users.

This Bemis Waterproof Bag is light in weight, yet is the strongest shipping bag made. It assures low-cost protection against sifting, breakage, caking, escape of odors, and many other common shipping complaints. Empty or

filled, it saves storage space.

Your special fertilizers packed in Bemis Waterproof Bags command top prices — and bring you repeat business.

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Plants and Offices in 33 Principal Cities

world rock supply for the fertilizer year ending June 30, 1947 will fall far below requirements, and no significant expansion program in rock mining is currently under way.

Superphosphate.—Production is principally under contract, with unsatisfied demand for additional quantities. However, due to scarcity of empty cars at the mines, rock deliveries are delayed, thus retarding the manufacture of superphosphate.

Potash.—Production is not only below the requirements of mixers, but shortage of empty cars tends to further reduce the quantity available. Some mixers have actually cut down their purchases of other materials until they are more sure of their potash position.

CHICAGO

Organic Prices Too High for Fertilizer Use. Feed Market Steady.

Exclusive Correspondence to "The American Fertilizer"

CHICAGO, February 1, 1947.

Another demonstration of organic scarcity was some inquiry from fertilizer manufacturers, which came into this territory recently for ammoniates, both animal and vegetable, which are used in feed. The prices asked, however, have been too high for fertilizer use, notwithstanding some distressed soy bean meal on the market.

Feed markets are otherwise fairly steady in most sections but reported somewhat easier in the east.

Potato Goals Revised Downward

The U. S. Department of Agriculture announced on January 24th a downward revision of 1947 potato acreage goals, in consideration of an upward revision of 1946 yields per acre and a revision downward of 1946 acreage.

The revised goal is set at 2,517,000 acres, as compared with the 2,669,800 acres announced October 31, 1946, a reduction of 152,800 acres. The Department's previously announced production goal of 375,000,000 bushels remains the same.

Department officials said this downward revision of acreage has been made because data recently made available reflect the national trend in potato production more accurately than earlier data used in arriving at the previously announced goals. The new data reveal that potato acreage has been declining nationally, while yield per acre during the same time has been increasing at a more rapid rate than had previously been estimated. No significant change in the data for early commercial acreage occurred and for that reason no revision of these acreage guides was made.

Much of the increase in yields has been due, officials said, to the pronounced shift of acreage from the non-commercial to the higher yielding commercial potato farms. To this must be added also the factor of better cultural practices, such as increased and more efficient use of irrigation and fertilizers and adoption by growers of newly developed insecticides.

Department officials again reminded growers that only these potato growers who plant within their acreage goals will be eligible for price support under the Department's 1947 potato price support program.

Phosphate and Potash Increase Feed Production

Using phosphate and potash on pastures and meadows is one way to increase feed production with little extra labor, declares J. O. Dockins of the University of Arkansas College of Agriculture.

Manufacturers' Sales Agents for **DOMESTIC**

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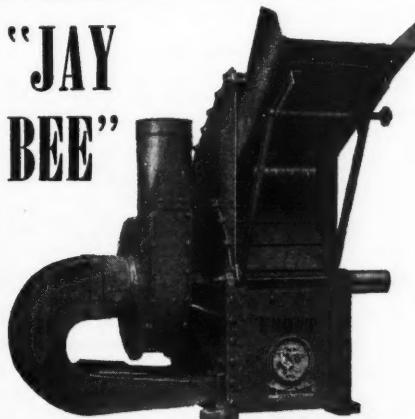
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The use of superphosphate has become a common practice on many Arkansas farms during the past few years. Farmers who used about 20,000 tons last year reported increases ranging from 25 to 100 per cent in hay or carrying capacity on their pastures.

The use of potash, the extension soils specialist said, has not been as widespread, but it should be added to the soil frequently if high yields are to be maintained. A ton of hay removes potash equal to 50 to 100 pounds of commercial muriate of potash.

Phosphate and potash may be applied in late winter or early spring before planting or before crops start growing. When applied to a newly planted crop, the fertilizers should be worked into the soil before planting.

Porter Succeeds Pope as Chemical Construction Head

Frederick Pope has announced his resignation as president of Chemical Construction Corporation, New York City. He will, however, continue his connection with the parent company, American Cyanamid Co.

Major General William N. Porter has been elected president of Chemical Construction Corporation, to succeed Mr. Pope.

WINTER GRAZING IN THE SOUTH

(Continued from page 16)

Charles Bell, Extension Livestock Specialist, working out the Georgia farm visits; J. C. Lowery and D. R. Harbor, Extension Agronomists, working out the Alabama routing, even to the police escort through the State; and Dr. Russell Coleman, Associate Station Director, J. M. Weeks, Extension Agronomist, and Prof. H. H. Leveck, Head, Department of Animal Husbandry, planning the Mississippi tour details.

College workers who participated in the tour in addition to those mentioned above were: Prof. W. H. Rankin, North Carolina; Extension Agronomists W. H. Craven and H. A. Woodle, Dr. Mack Drake, E. B. Eskew, R. Garrison and E. G. Godbey, all of the Clemson, South Carolina, staff, with several others, including county agents and railroad agents in their respective States. Industry men who took part in nearly all of the tour were: B. Chronister, Leroy Donald, J. C. Morcock and Fred McNatt of Barrett; Ward H. Sachs of du Pont; H. H. Tucker, Coke Oven Ammonia Research Bureau; R. E. Patterson and Claud Byrd, Spencer Chemical Co.; Sam Redfern and C. Somerour of the American Potash Institute; S. D. Orr, Swift and Co.; and R. H. Lush, N. F. A. Others joining in for a part of the tour included H. Bonar, Chilean Nitrate Educational Bureau; C. J. Ball, W. W. Belser and L. O. Hinton, Barrett; Warren Huff, Coke Oven Ammonia Research Bureau; Robert H. Engle, N. F. A., J. R. Taylor, American Plant Food Council; Frank Boyd, Virginia-Carolina Chemical Corp.; Henry Jackson, Piedmont Fertilizer Co.; Joe E. Culpepper and J. A. Phillips of Spencer Chemical Co.; W. T. Bennett and James Drann, Central of Georgia Railway; E. S. Center, Atlanta and West Point Railway; Ben Curtis, Tennessee Coal and Iron Co.; and others from The American Agricultural Chemical Co., F. S. Royster Guano Co., Swift & Co., etc.

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Advertisements for sale of plants, machinery, etc. and for help and employment in this column, same type as now used, 60 cents per line, each insertion.

FOR SALE—8-foot Incline Conveyor to elevate bags from Sewing Machine conveyor to a height of 45 inches. The Rogers & Hubbard Co., Portland, Conn.



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When Boron deficiencies are found, follow the recommendations of local County Agents or State Experiment Stations.

Information and references available on request.

AMERICAN POTASH & CHEMICAL CORPORATION

122 East 42nd ST., NEW YORK CITY

Pioneer Producers of Muriate of Potash in America

See Page 38

HOUSE COMMITTEE REVIEWS FERTILIZER SITUATION

(Continued from page 12)

tion. He said that the process of making ammonium nitrate in Army plants generally required operations in three plants in separate locations for security reasons, consequently the processes were uneconomical for making fertilizer. He said the Army would rather buy ammonium nitrate commercially because it was far less expensive that way—that Army production costs were \$80 per ton at first, but with volume production the cost was reduced to between \$60 and \$70. He said the Army "borrowed" 33,000 tons N from private producers last fall, until it could get its program going, that Army had produced 11,000 tons ammonium nitrate to January 1, 1947, and 30,000 tons in January. He said the Army program originally called for 240,000 tons N, was reduced to 200,000 tons and now was being cut to 100,000 tons N because of the tankcar situation. He said Army would complete the "return" of 110,000 tons ammonium nitrate borrowed from private producers on or about the middle of April, depending on tankcars, and would continue to operate its plants until September or October. He said further operation would depend on budget provisions for taking care of occupied territories and that it was either a question of fertilizing crops in the occupied zones, supplying food or greatly increasing the size of our "police force" to handle riots while the people starved.

Frederic Arden, OTC (formerly CPA), said in effect, that we might have an additional 33,000 tons N in solid form that we have not included in estimates due to increased ammonium nitrate production under way at "a Louisiana plant" and an easing of the soda ash situation for the production of domestic sodium nitrate. Questioned about the fairness of "directives" and "ratings" for this export business, he explained that ammonium nitrate requirements for export were divided equitably among the ammonium nitrate producers.

C. R. Megee, American Association of Railroads, said 735,104 box cars were in operation January 1, 1946, compared with 702,391 on

January 1, 1947, and that cars were being retired faster than they could be replaced. He added that phosphate rock loadings for the first three months of 1947 were expected to be up 9.4 per cent above the same period in 1946.

Porter Howard, ODT, reviewing the shortage of chemical tankcars for all purposes, said the 100,000 petroleum cars were not idle. He said government agencies had solved the acid cars situation to some extent by taking cars from the petroleum trade, but high-pressure cars for ammonia and liquid petroleum gas would be short through June, 1947. He said the U. S. was short 1,000 such cars on December 1, 1946, and that new cars are just now coming in at the rate of 100 to 200 a month.

The Committee's Recommendations

Following the hearing, the Sub-committee studied the testimony and on February 6th reported to the Committee on Agriculture, making the following recommendations

1. That the War Department immediately return the 33,000 tons of contained nitrogen (110,000 tons of ammonium nitrate), or such portion thereof not already returned, to the consumer interests from which it was borrowed, and that the same be made immediately available to the American farmers.
2. That future Army exports for use in occupied areas be limited strictly to fertilizer produced in Army-sponsored plants.
3. That there be an immediate and careful review of Government export commitments and adjustments to the end that fertilizer requirements of American farmers may be more amply fulfilled.
4. That the program for converting tank cars from petroleum service to use in fertilizer production be pushed with all possible speed.
5. That the responsible Government officials expedite and assist movement of Canadian fertilizer materials into the United States.
6. It is urgently recommended that the fertilizer industry, Government agencies, railroads, and all others concerned in fertilizer production and distribution, cooperate earnestly and intelligently in a program of timed distribution so that fertilizer will be available in specific areas for the planting and dressing of major crops at the time it will do the most good.

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Batch Mixers—Dry Batching Pan Mixers—Wet Mixing

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ATLANTA, GA.**

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ATLANTA 1, GA.**



THE 1946-47 FERTILIZER PROGRAM

(Continued from page 10)

was achieved in spite of a shortage of sulphuric acid in many areas, a shortage of box cars for transportation of phosphate rock, the maritime strike which stopped coastal shipments for some time, and some plants being out of production for many other reasons. Additional sulphuric acid has recently become available in the Chicago area. Having overcome many obstacles during the last year, production of sulphuric acid at the Alabama ordnance plant should start early in 1947. These developments should make possible a record production of soluble phosphate in the first six months of 1947.

The exports of soluble phosphate (P_2O_5) in 1946-47 are programmed as follows:

	Tons
Canada.....	26,000
Iceland.....	216
Kenya.....	1,380
Philippines.....	1,812
British West Indies.....	700
Latin American Republics.....	21,000
UNRRA (China).....	5,500

The United States will import 26,282 tons P_2O_5 from Canada. Thus, the net exports of soluble P_2O_5 will be 30,326 tons P_2O_5 or about two per cent of the total supply.

Potash Supplies

Potash supplies for 1946-47, estimated at 750,000 tons, will be slightly above the all-time high reached last year. Allocation of potash was suspended September 30, 1945, at the same time that other Government controls on distribution of fertilizers were terminated. However, after a review of the situation, potash allocations from producer to fertilizer manufacturer were reinstated by the Civilian Production Association on June 1, 1946. The Department of Agriculture concurred in the potash allocation and recommended a pattern of distribution to meet essential requirements for each region. The

amount for each region was calculated so that it would receive as much potash in the 10-month period from June 1946 to March 1947 as in the corresponding period in 1944-45.

The allocations of potash (K_2O) for the period June 1, 1946, through March 31, 1947, made by the Civilian Production Administration, are as follows:

	Tons
U. S. agricultural fertilizer.....	679,338
Canada.....	35,929
Export (other than Canada).....	14,778
Industrial or chemical.....	65,835

Of the supply to United States agriculture, 35,606 tons K_2O was allocated or reserved for new or expanded fertilizer plants. This included approximately 65 new plants and 44 expansions of plants, according to CPA.

Table V shows the deliveries of potash (K_2O) for agriculture from United States production in the 12-month periods shown.

TABLE V
DELIVERIES OF POTASH (K_2O) FROM UNITED STATES PRODUCTION, JUNE 1944—MAY 1945,
COMPARED WITH JUNE 1945—MAY 1946

	June 1944	June 1945	May 1945	May 1946
	Tons	Tons	Tons	Tons
Continental United States.....	692,406			741,555
Canada.....	43,768			45,521
Puerto Rico.....	18,711			18,642
Hawaii.....	9,513			12,092
Cuba.....	3,483			3,372
		767,881		821,482

Other exports for agricultural use, June 1945 through May 1946, totaled 13,049 tons K_2O , less than two per cent of the supply.

Potash deliveries for the five-month period, June through November 1946, were 365,715 tons K_2O compared with 356,670 tons in the corresponding period of 1945, an increase of about three per cent.

TABLE IV
PRODUCTION OF THE THREE FORMS OF SOLUBLE PHOSPHATE FERTILIZER, FISCAL YEAR 1945-46, AND FIRST FOUR MONTHS 1945-46 AND 1946-47

		July-June 1945-46	July-Oct. 1945-46	July-Oct. 1946-47
Normal	Tons of material.....	7,579,796	2,526,982	2,537,409
18 per cent APA				
Concentrated	Tons of material.....	281,397	82,368	111,661
45 per cent APA				
Wet base goods	Tons of material.....	47,912	12,807	13,941
18 per cent APA				
Total	Tons P_2O_5	1,499,616	494,228	509,490

KNOW - - - - - - - TO A CERTAINTY

the number of pounds of raw material for a desired per cent. of plant food in a ton of mixed goods—or find what per cent. of a certain plant food in a ton of fertilizer produced by a specific quantity of raw materials.

No mathematical calculations are necessary. You can find the figures in a few seconds with the aid of

Adams' Improved Pocket Formula Rule

A Great Convenience for the Manufacturer of High Analysis Goods



To make clearer its use, answers to such problems as the following can be quickly obtained:

How much sulphate of ammonia, containing 20 per cent. of nitrogen, would be needed to give $4\frac{1}{2}$ per cent. nitrogen in the finished product?

Seven hundred and fifty pounds of tankage, containing 8 per cent. phosphoric acid are being used in a mixture. What per cent. of phosphoric acid will this supply in the finished goods?

Should the Adams' Formula Rule become soiled from handling, it may be readily cleaned with a damp cloth.

PRICE
\$1.25

TO BE SENT
WITH ORDER.
Special quotations
on twelve or
more.

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Export allocations of K₂O for the year 1946-47 are as follows:

	Tons
Canada.....	41,060
Latin American Republics.....	10,612
British West Indies.....	2,880
Ic.-land.....	496
Philippines.....	236
New Zealand.....	1,581

In pre-war years 1935-39 the United States imported about one-half its potash from Europe. Although domestic production has been increased to about three times the pre-war level, the present demand is in excess of the greatly increased supply. Imports are expected to again start flowing from European sources in the not too distant future. For this year the United States has been allocated 55,000 tons K₂O from French and German production. Government representatives have said that importers could be granted permission to bring in potash from French and German sources outside the present domestic allocations.

The anticipated domestic supply of potash in the "spot period" of April and May, 1947, according to the Chemical Division of OTC (formerly CPA) is 118,949 tons K₂O, about 25 per cent less than the amount shipped in the corresponding period last year, but 18.6 per cent more than in the same period in 1945. The industrial needs are estimated to be greater in April and May of 1947, than in the same months of 1946. The yearly supply of 750,000 tons K₂O for domestic agriculture from United States production should be reached with the allocations in Period 8 (June 1946 through March 1947), and the anticipated supply in April and May 1947.

Fertilizer Consumption

Fertilizer consumption reached a record high of 13,201,703 tons in the 1945 calendar year. The average annual consumption in 1935-39 was 7,337,631 tons. There has been an annual increase in consumption of approximately 1,000,000 tons each year since 1940 when the consumption was 8,249,156 tons. The greatest increase in consumption has been in the North Central and Western States, where it is two to three times the pre-war level. According to tag sale reports in 16 Southern and North Central States, the 1946 consumption will exceed the 1945 record. Tag sales for 11 months of 1946 were 8,347,753 tons in these 16 States as compared with 7,237,632 tons in 11 months of 1945, a 15 per cent increase.

Fertilization Doubles Growth of Pasture Grass

Applications of lime and fertilizer doubled the amount of grass produced during the past five years in an old permanent pasture at the Dairy Experiment Farm, Montrose, Pa., according to S. R. Skaggs.

Every dollar expended in liming and fertilizing this pasture resulted in the production of almost \$3 worth of additional milk. The pasture consists of about seven acres.

The treated pasture was limed twice and fertilized three times at the rate of 320 pounds of 20 per cent superphosphate plus 83 pounds of 60 per cent muriate of potash per acre. The lime and fertilizer cost an average of \$5 per year per acre and labor and equipment used in applying them cost an additional \$2.28, a total of \$7.28 per acre per year.

The average additional milk produced annually on the extra grass grown as a result of this pasture treatment weighed 1,041 pounds and sold for \$32.10. The supplementary feed utilized by the four cows on this pasture at present prices would be valued at \$10.94. This leaves a net annual return of \$21.16 for an annual investment of \$7.28.

It's a Matter of Interest

Any farmer is likely to agree that if he could put money in the bank and draw 95 per cent interest, he'd have a very profitable deal.

While he won't find a bank around that will offer him a proposition like that, there is a deal that will bring him profits on the same basis, says Dr. Roy L. Donahue, Farm Unit Demonstration supervisor of the Texas A. & M. College Extension Service. And Dr. Donahue is talking about fertilization as a part of a soil building, crop rotation program.

A farmer can put into the soil five pounds of minerals—lime, phosphorus, potash—and take out 100 pounds of dry grass, explains Dr. Donahue. He can look at the 95 pounds as interest on the fertilizer investment. And where does the 95 pounds come from? From the air and water, says Dr. Donahue, which the good Lord has provided free. In fact, 95 per cent of the dry weight of plants comes from air and water.

Applying fertilizer and growing soil-building legumes is like reversing the process of investment—putting in the interest and drawing out the principal. The interest, in this case, is lime, phosphorus and potash.

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For an Alphabetical List of all the
Advertisers, see page 33

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Bradley & Baker, New York City.
Huber & Company, New York City.
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PHOSPHATE ROCK

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Ruhm, H. D., Mount Pleasant, Tenn.
Schmaltz, Jos. H., Chicago, Ill.
Virginia-Carolina Chemical Corp., Richmond, Va.

PLANT CONSTRUCTION—Fertilizer and Acid

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Sturtevant Mill Company, Boston, Mass.
Utility Works, The, East Point, Ga.

POTASH SALTS—Dealers and Brokers

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Ashcraft-Wilkinson Co., Atlanta, Ga.
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Bradley & Baker, New York City.
Huber & Company, New York City.
International Minerals & Chemical Corporation, Chicago, Ill.
Schmaltz, Jos. H., Chicago, Ill.

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International Minerals & Chemical Corp., Chicago, Ill.

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McIver & Son, Alex. M., Charleston, S. C.

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International Minerals & Chemical Corporation, Chicago, Ill.
McIver & Son, Alex. M., Charleston, S. C.
Schmalz, Jos. H., Chicago, Ill.
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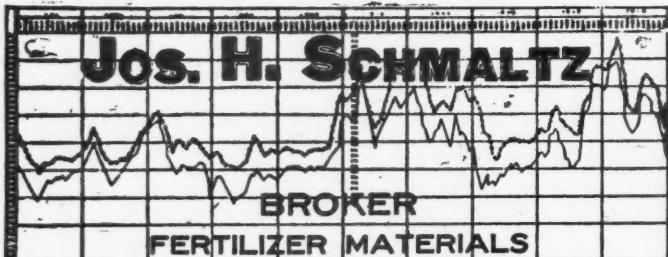
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